

## PATENT SPECIFICATION

251,533



Application Date: Oct. 26, 1926. No. 20,805 / 26.

(Patent of Addition to No. 229,760; Nov. 29, 1925.)

Complete Accepted: May 6, 1926.

## COMPLETE SPECIFICATION.

## Improvements in Rotary Tools for Cleaning, Chipping and Scaling Surfaces.

I, WILLIAM BRUCE WRIGHT, British subject, of 26, Cundy Road, Custom House, London, E.16, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention which is an improvement in or modification of the invention described and claimed in my prior Specification No. 229,760 has for its object to provide an improved or modified construction of rotary tool of the kind referred to wherein the helical springs interposed between the hammer devices are dispensed with, this omission being rendered possible by the use of a hammer supporting helix of novel design.

According to the present invention the hammers of the rotary tool are suspended from loops formed at intervals in a bent rod extending about and also along the spindle so as to form what may be termed an irregular helix. This irregular helix which is attached at its ends to arms extending radially from two points spaced along the length of the spindle of the rotary tool, is sufficiently resilient of itself to absorb the shocks which may be imparted to it by the hammers during operation. By the use of this irregular helix the need for the employment of helical springs intermediate the hammers is obviated. As viewed from the end the irregular helix may be of any desired shape provided it is substantially symmetrical with reference to the axis of rotation.

The invention is hereinafter more fully described with reference to the accompanying drawing wherein:—

Fig. 1 is a sectional elevation and

Fig. 2 an end elevation of one practical form of the present invention and

Fig. 3 is a detail sectional view taken on the line 3—3 of Fig. 1 showing the method of connection between the irregular helix and the spindle.

Referring to these figures it will be seen that the improved rotary tool comprises a shaft or spindle *a* mounted to rotate in ball bearings *b*, *b* supported in a tubular member *c* forming a handle to the device, one end of the spindle projecting beyond the tubular member where it carries the hammer devices for performing the actual cleaning, chipping or scaling operations.

According to the present improvement the hammer devices *d* are engaged with loops *e* formed at intervals in an irregular helix *f* mounted concentrically about the spindle *a*. This irregular helix is composed of a metal rod bent so as to pass around and progress along the length of the spindle and having outwardly directed loops formed at equidistant points for the suspension of the hammer elements *d*. The helix in the example illustrated consists of a series of short straight sections united by three quarter turn loops so that the adjacent straight sections stand at right angles to each other. The ends of the rod which are screw-threaded and provided with nuts *g* pass through holes in bosses *h*, *h* mounted on the outer end *a'* of the spindle *a* which is formed with a longitudinally extending flat surface engaged by the ends of the rod of the helix. In this manner rotation of the helix relatively to the spindle is prevented, whilst endwise movement is prevented by a nut *a''* applied to the extremity of the spindle.

In the construction illustrated the hammer elements *d* are composed of short lengths of stout wire bent into double formation and afterwards twisted

together at the ends. Other forms of hammer devices such for example, as those indicated in the parent specification may be utilised in conjunction with this 5 irregular helix, and one or more hammer elements may be engaged with each loop of the helix. Also a shield *d* affixed to a flange at the end of the tubular handle may be provided to protect the operator 10 from fragments set flying by the rotating tool head.

As will readily be understood the hammer elements *d* under the influence 15 of centrifugal force assume, when the tool is in operation, radial positions with reference to the spindle *a* and strike in quick succession the surface being treated, acting at points distributed along a line whose length depends upon the 20 axial length of the helix *f*. The loops *c* provided at intervals render the helix more or less resilient so that it is enabled to absorb the shocks which may be set up by the hammers in striking the surface 25 treated.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. The improvement in or modification 80 of the rotary tool claimed in Specification No. 229,760, wherein the hammer devices are suspended from an irregular helix surrounding the spindle of the tool.

2. The improvement in or modification 95 of the rotary tool claimed in Specification No. 229,760, comprising a spindle and a series of hammer devices suspended from loops formed at intervals in a rod bent to form an irregular helix surrounding the tool spindle.

3. The improved rotary tool for cleaning, chipping and scaling surfaces substantially as described with reference to 40 the accompanying drawing.

Dated this 26th day of October, 1925.  
WHEATLEY & MACKENZIE,  
40, Chancery Lane, London, W.C. 2,  
Agents.

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*[This Drawing is a reproduction of the Original on a reduced scale.]*

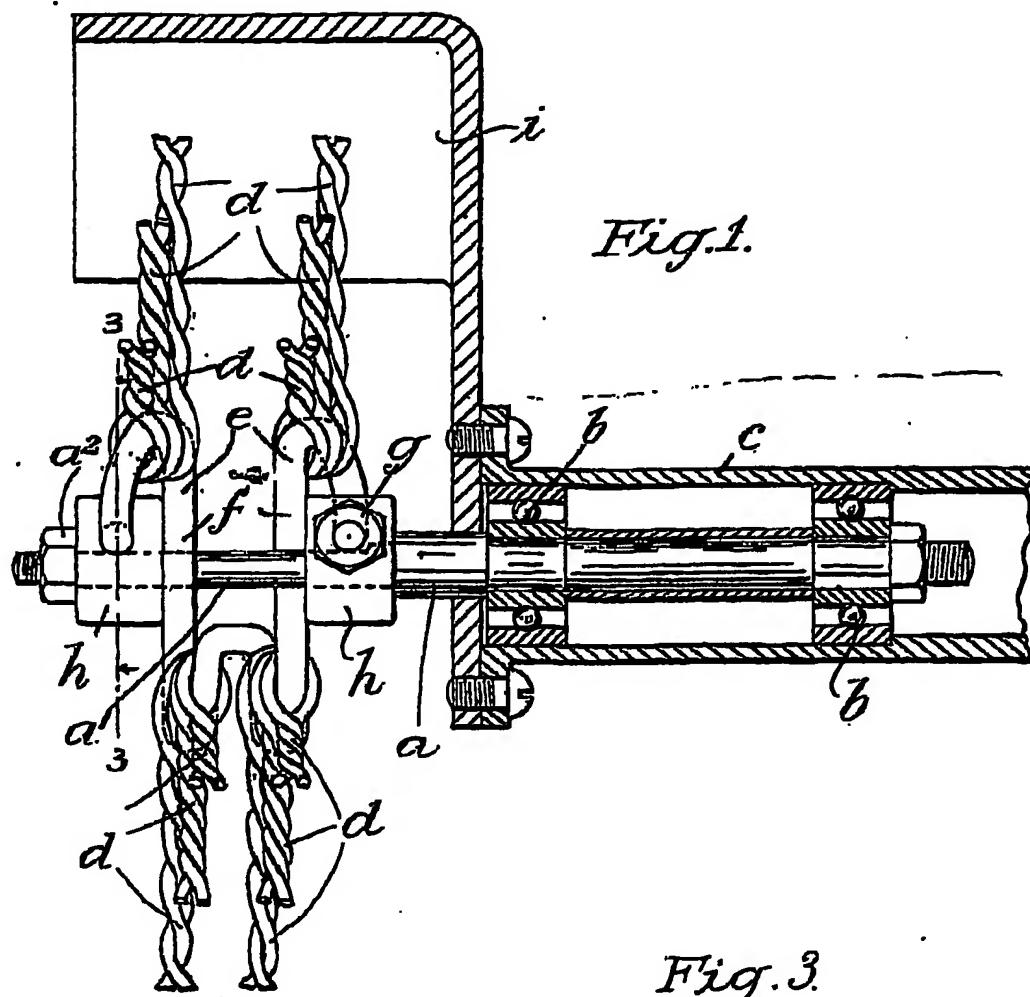


Fig. 1.

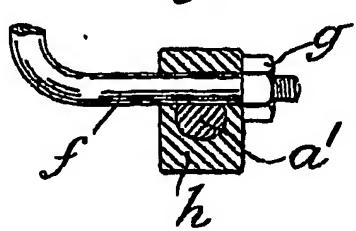
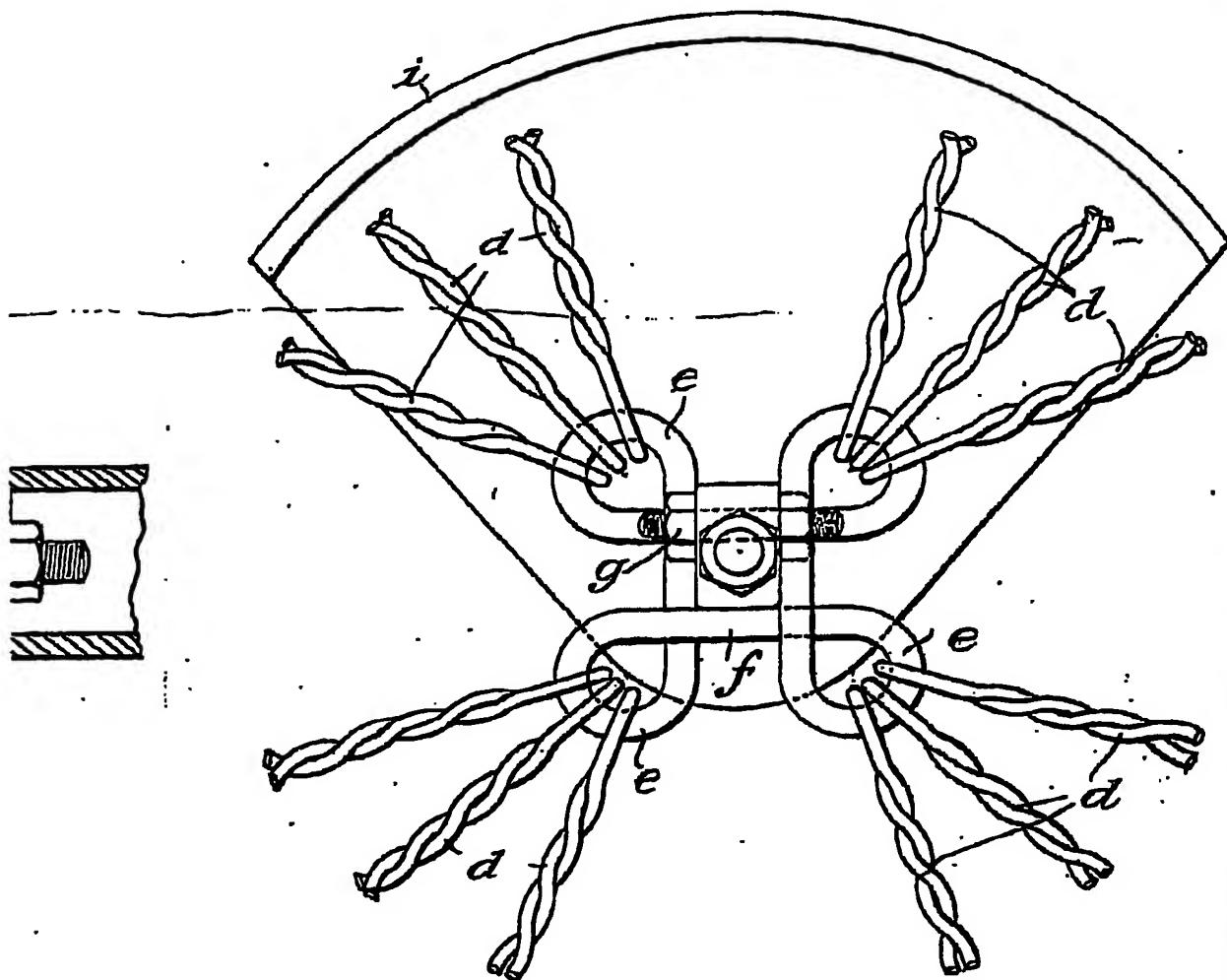


Fig. 3.

1 SHEET

Fig. 2.



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Fig. 2

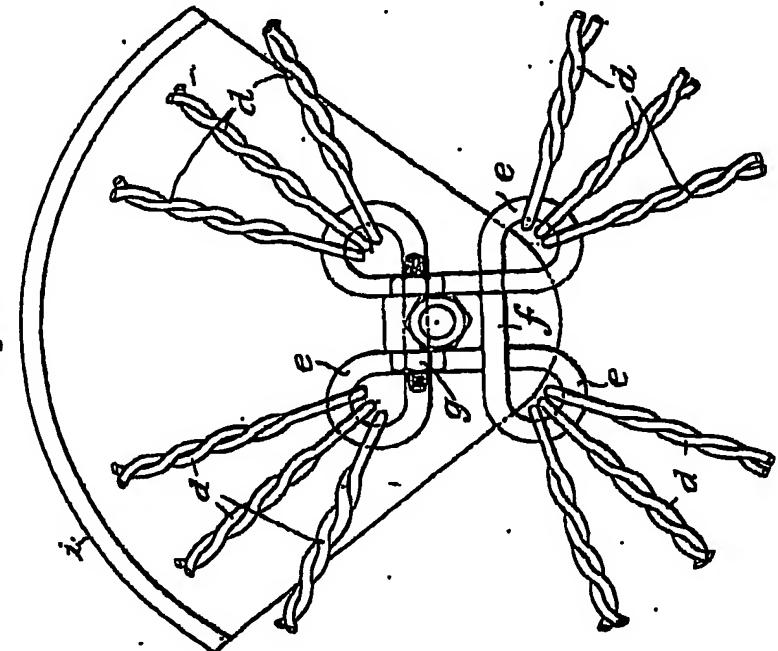


Fig. 1.

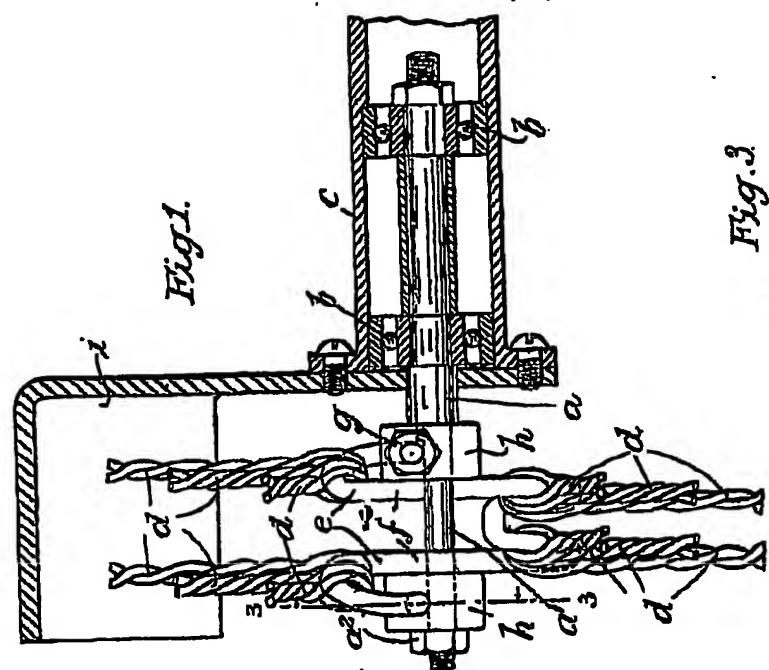
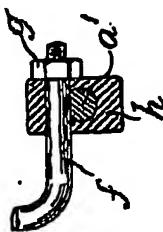


Fig. 3



(This Drawing is a reproduction of the Original on a reduced scale)